

<b>NASA/GSFC</b>	<b>NETWORKS AND MISSION SERVICES PROJECTS (N&amp;MSP) CONFIGURATION CHANGE REQUEST (CCR)</b>											
<b>1. CCR. NO.</b>  CCR-451-ICD-12	<b>2. DATE</b>  December 11, 1998	<b>3. PRIORITY</b> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input type="checkbox"/> EMERGENCY  <input type="checkbox"/> URGENT  <input checked="" type="checkbox"/> ROUTINE </div>	<b>4. CHANGE LEVEL</b>  <input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C									
<b>5. TITLE OF CHANGE:</b> Data Bit Jitter Parameter Modifications												
<b>6. DOCUMENT TITLE:</b> Interface Control Document (ICD) between the NCC/FDF and the WSC, Revision 5, through DCN 01, 6/30/98  <b>DOCUMENT NO.:</b> 530-ICD-NCC-FDF/WSC, Rev. 5 through DCN 01  <b>LIST ALL AFFECTED DOCUMENTS INCLUDING PROCEDURES:</b> 405-TDRS-RP-ICD-001, 12/95 through SCN 01 530-ICD-NCCDS/MOC, DCN 6, 4/97, ICD between the NCC and the MOCS 530-SNUG, Rev 7, 11/95, Space Networks Users Guide <div style="text-align: right;">(CONT. ON ATTACHMENT)</div>												
<b>7. REASON FOR CHANGE:</b> Clarify treatment of data bit jitter SHO parameters.  <div style="text-align: right;">(CONT. ON ATTACHMENT)</div>												
<b>8. DESCRIPTION OF CHANGE:</b> Pages 9-19, 9-20, 9-22, 9-23, 9-28, 9-29, 9-30  <div style="text-align: right;">(CONT. ON ATTACHMENT)</div>												
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<b>10. COMMENTS:</b> The CCR can be viewed online at the following address <a href="http://stelwscpo.gsfc.nasa.gov/icd/530-NCC/default.htm">http://stelwscpo.gsfc.nasa.gov/icd/530-NCC/default.htm</a> A deleted asterisk "*" is denoted by a solid change bar directly underneath it. An added asterisk "*" is denoted by a solid change bar located a space below the asterisk "*".												
<b>11. ORIGINATOR</b> D. Littmann, x7643 <b>CODE</b> 451  <b>SIGNATURE</b> _____ <b>DATE</b> _____		<b>12. SEGMENT MANAGER'S APPROVAL</b> <b>CODE</b> _____  <b>SIGNATURE</b> _____ <b>DATE</b> _____										
<b>13. BOARD CHAIRPERSON SIGNATURE</b> <b>DATE</b> _____		<b>14. BOARD CHAIRPERSON COMMENTS</b>   										
<b>15. BOARD ACTION</b> <input type="checkbox"/> Approved <input type="checkbox"/> Withdrawn <input type="checkbox"/> Disapproved <input type="checkbox"/> Deferred  		<b>16. ACTION REQUIRED</b> <input type="checkbox"/> Publish Document <input type="checkbox"/> Publish DCN <input type="checkbox"/> Deviation <input type="checkbox"/> Waiver <input type="checkbox"/> Implement Change <input type="checkbox"/> Other _____										

<u># of Bytes</u>	<u>Data Item</u>
1	Data Bit Jitter for I Channel 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved**</u> <u>4 = Reserved**</u> <u>5 = Reserved**</u>
1	Data Bit Jitter for Q Channel 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved**</u> <u>4 = Reserved**</u> <u>5 = Reserved**</u>
1	G2 Inversion - I Channel 0 = G2 polynomial normal 1 = G2 polynomial inverted
1	G2 Inversion - Q Channel 0 = G2 polynomial normal 1 = G2 polynomial inverted
1	Mode 1 = Mode 1 - Coherent 2 = Mode 2 - Noncoherent
1	Spare
1	Data Channel Configuration 0 = Single Data Source 1 = Dual Data Source
5	Frame Length - I Channel* (32000 bits maximum)
2	Frame Sync Word Length - I Channel (32 bits maximum)
4	Frame Sync Word Bit Pattern - I Channel (8 hexadecimal digits - left justified)

\* Note: Frame Length equal to zero indicates that Data Quality Monitor (DQM) is not required for this channel.

\*\*If inadvertently received, will be treated as 0.1%.

~~\*\* The value of N3 will always be "1".~~

<u># of Bytes</u>	<u>Data Item</u>
5	Sync Strategy Parameters - I Channel** N <sub>1</sub> , N <sub>2</sub> , N <sub>3</sub> , N <sub>4</sub> , N <sub>5</sub>
5	Frame Length - Q Channel* (32000 bits maximum)
2	Frame Sync Word Length - Q Channel (32 bits maximum)
4	Frame Sync Word Bit Pattern - Q Channel (8 hexadecimal digits - left justified)
5	Sync Strategy Parameters - Q Channel** N <sub>1</sub> , N <sub>2</sub> , N <sub>3</sub> , N <sub>4</sub> , N <sub>5</sub>
221	

#### 9.2.3.9 SSA/SMA Return, Fixed Parameters

<u># of Bytes</u>	<u>Data Item</u>
3	SHO Subheader No. 1
22	SHO Subheader No. 2
1	SHO Subheader No. 3
6	SHO Subheader No. 4
9	Spare
1	Receiver Configuration - Normal User 0 = Normal 1 = Cross-support
	Symbol Format Conversion to BI $\phi$ -L for DG1/DG2
1	I Channel - Normal User 0 = No 1 = Yes
1	Q Channel - Normal User 0 = No 1 = Yes
1	SSA Combining (ASCII blank for SMA service) 0 = No 1 = Yes

\* Note: Frame Length equal to zero indicates that Data Quality Monitor (DQM) is not required for this channel.

\*\* The value of N3 will always be "1".

<u># of Bytes</u>	<u>Data Item</u>
1	Polarization - Shuttle 0 = LCP 1 = RCP
4	Maximum EIRP - Normal User Sign, 3 Digit (LSD = 0.1 dBw)
4	Minimum EIRP - Normal User Sign, 3 Digits (LSD = 0.1 dBw)
4	Maximum EIRP - Shuttle Sign, 3 Digits (LSD = 0.1 dBw)
4	Minimum EIRP - Shuttle Sign, 3 Digits (LSD = 0.1 dBw)
3	I/Q Channel Power Ratio (DG1/DG2) - Normal User Sign, 2 Digits (LSD = 0.1 dB)
1	Data Format for I Channel (DG1/DG2) - Normal User 0 = NRZ-L 1 = NRZ-M 2 = NRZ-S 3 = BI $\phi$ -L 4 = BI $\phi$ -M 5 = BI $\phi$ -S
1	Data Format for Q Channel (DG1/DG2) - Normal User 0 = NRZ-L 1 = NRZ-M 2 = NRZ-S 3 = BI $\phi$ -L 4 = BI $\phi$ -M 5 = BI $\phi$ -S
1	Data Bit Jitter for I Channel (DG1/DG2) - Normal User 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved*</u> <u>4 = Reserved*</u> <u>5 = Reserved*</u>

\* If inadvertently received, will be treated as 0.1%.

<u># of Bytes</u>	<u>Data Item</u>
1	Data Bit Jitter for Q Channel (DG1/DG2) - Normal User 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved*</u> <u>4 = Reserved*</u> <u>5 = Reserved*</u>
1	Data Bit Jitter for Shuttle 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved*</u> <u>4 = Reserved*</u> <u>5 = Reserved*</u>
10	Shuttle Transmit Frequency if Noncoherent (LSD = 10 Hz) (Note: Must contain zero value if transmit frequency is coherent)
1	Data Group - Normal User 1 = Data Group 1 2 = Data Group 2
1	DG1 Mode - Normal User 1 = Mode 1 - Coherent 2 = Mode 2 - Noncoherent 3 = Mode 3 - Coherent with no Q channel deinterleaving 4 = Mode 3 - Coherent with Q channel deinterleaving

\* If inadvertently received, will be treated as 0.1%.

<u># of Bytes</u>	<u>Data Item</u>
1	Data Format for Q Channel (DG1/DG2) - Normal User 0 = NRZ-L 1 = NRZ-M 2 = NRZ-S 3 = BI $\phi$ -L 4 = BI $\phi$ -M 5 = BI $\phi$ -S
1	Data Bit Jitter for I Channel (DG1/DG2) - Normal User 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved*</u> <u>4 = Reserved*</u> <u>5 = Reserved*</u>
1	Data Bit Jitter for Q Channel (DG1/DG2) - Normal User 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved*</u> <u>4 = Reserved*</u> <u>5 = Reserved*</u>
10	Shuttle Transmit Frequency (LSD = 10 Hz)
1	Data Group - Normal User 1 = Data Group 1 2 = Data Group 2
1	DG1 Mode - Normal User 1 = Mode 1 - Coherent 2 = Mode 2 - Noncoherent 3 = Mode 3 - Coherent
1	DG2 Type - Normal User 1 = Noncoherent 2 = Coherent
1	Shuttle Mode 1 = Mode 1 2 = Mode 2, Channel 3 Digital 3 = Mode 2, Channel 3 Analog 4 = Mode 2, Channel 3 TV
1	Spare

\* If inadvertently received, will be treated as 0.1%

<u># of Bytes</u>	<u>Data Item</u>
1	Data Bit Jitter, Channel 1 (Mode 1 or 2) — Shuttle 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved**</u> <u>4 = Reserved**</u> <u>5 = Reserved**</u>
1	Data Format, Channel 2 (Mode 1 or 2) – Shuttle 0 = NRZ-L 1 = NRZ-M 2 = NRZ-S 3 = BI $\phi$ -L 4 = BI $\phi$ -M 5 = BI $\phi$ -S
1	Data Bit Jitter, Channel 2 (Mode 1 or 2) – Shuttle 0 = None 1 = 0.01% 2 = 0.1% <u>3 = 0.5% ***</u> <u>4 = 1.0% ***</u> <u>5 = 2.0% ***</u>
9	Data Rate, Channel 2 (Mode 1 or 2) (LSD = 1 bps) - Shuttle
1	Data Format, Channel 3, (Mode 1 or 2) – Shuttle* 0 = NRZ-L 1 = NRZ-M 2 = NRZ-S 3 = BI $\phi$ -L 4 = BI $\phi$ -M 5 = BI $\phi$ -S    } only for Channel 3, Mode 2

\* In Mode 2, simultaneous support of digital data on Channel 3 and the 1.024 MHz subcarrier on \_\_\_ Channel 2 is not required.

\*\* If inadvertently received, will be treated as 0.1%.

\*\*\* BI $\phi$ -L only. If inadvertently received for other data formats, will be treated as 0.1%.

<u># of Bytes</u>	<u>Data Item</u>
1	Data Bit Jitter, Channel 3, (Mode 1 or 2) — Shuttle* 0 = None 1 = 0.01% 2 = 0.1% <u>3 = Reserved **</u> <u>4 = Reserved **</u> <u>5 = Reserved **</u>
9	Data Rate, Channel 3 (Mode 1 or 2) (LSD = 1 bps) - Shuttle
1	Shuttle 1.024-MHz Subcarrier 1 = Not used 2 = Channel 2 3 = Channel 3
8	Spare
1	G2 Inversion - I Channel - Normal User (See ground rule 29, Section 2.2.2) 0 = G2 polynomial normal - I leads Q, or G2 polynomial inverted and I lags Q 1 = G2 polynomial inverted - I leads Q, or G2 polynomial normal and I lags Q
1	G2 Inversion - Q Channel - Normal User 0 = G2 polynomial normal 1 = G2 polynomial inverted
1	Data Channel Configuration - Normal User 0 = Single Data Source 1 = Dual Data Source
1	DG2 Modulation - Normal User 0 = QPSK 1 = BPSK

\* Not applicable for Mode 2.

\*\* If inadvertently received, will be treated as 0.1%

\* ~~The value of N3 will always be "1".~~

~~\*\* Frame length equal to zero indicates that DQM is not required for this channel. For single data source with alternate bits on the I and Q channels, the I Channel DQM parameters are applicable.~~